Exhibit B

PaineWebber® EDGE^{SM} Trading

Release 1.0 Functional & Business Requirements

Document Version 2.1

December 19, 1998

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1   Introduction

The purpose of this document is to define the business requirements, both technical and non-technical (i.e. business processes), that will result in Release 1.0 of On-line Trading via the PaineWebber EDGE Internet Site. This document will define requirements for applications and modules such as edit checks and validations as well as business processes such as enrollment and support.

This document is a "work in progress" and contains open issues. These, as well as other issues, will be continuously addressed throughout the life of the project.

Gray boxes like this one indicate important open issues

NOTE: ALL SYSTEMS DESIGNED FOR EDGE ON-LINE TRADING MUST BE YEAR 2000, MILLENNIUM COMPLIANT.

1.1   Document Revision History

Release 1.0   July 20, 1998. First release.

Release 1.1   July 30, 1998. Updated service requirements to include order entry capabilities for service representatives.

Release 1.2   August 11, 1998. Updated Type 1 cash calculations.

Release 1.3   August 25, 1998. Updated Edit Checks Appendix after Compliance review.

Release 1.4   September 18, 1998. Updated Type 2 margin calculations and Business Rules.

Release 1.5   October 7, 1998. Added "Selected Front-end Components" section.

Release 1.6   October 21, 1998. Updated Selected Front-end Components with PAA information.

Release 1.7   November 7, 1998. Updated Enrollment to include same day cancel information, non-U.S. addresses, and added new account flag.

Release 1.8   November 10, 1998. Updated Edit Checks. Removed syndicate order check and updated several alert messaging definitions.

Release 1.9   December 4, 1998. Updated Edit Checks with new IE Registration check and Management Reporting including event reporting.

Release 2.0   December 9, 1998. Added Drop Copy and Alert Messaging to IE Playback Section. Updated margin requirements and removed sell order credits.

Release 2.1   December 19, 1998. The following changes have been made to Administrative
Components

- Added "super user."
- Redefined "signup date" and renamed "validation date."
- Redefined passwords.

Added "Additional Requirements" section.
Modified "OLT Edit Check Override Screen" section.
Updated Edit Checks.
Updated Enrollment to reflect new business process.

2   Enrollment

2.1   Overview

The new EDGE Enrollment System will handle both EDGE enrollments and OLT account validations. This enrollment system will be modeled after the recently developed OFX Enrollment System.

Please note that the screen shots used throughout this section are from the OFX system requirements and are to be used as a guide of sample illustrations of functions for this EGDE Enrollment System.

The new EDGE/OLT enrollment system will need to take into consideration the following points:

- The EDGE/OLT enrollment system will be titled: "PW EDGE AND OLT ENROLLMENT SYSTEM."

- Programming is necessary to incorporate all existing EDGE enrolled clients, as well as allow new EDGE and EDGE/OLT enrollments. **For example, there must be the ability to modify/cancel all existing EDGE enrollments.**

The following is an outline of the EDGE/OLT Enrollment System specifications:
- Accessing the Enrollment System
- Select a Client to Enroll Screen
- Client Profile Screen
  - ➤ Restricted Countries
  - ➤ Address Override
  - ➤ Non-US clients
- Account Retrieval Screen
- Assignment of EDGE Registration Ids and OLT passwords
- Fulfillment
- Service Cancellation
- MIS Reporting
- Account Inquiry

2.2 Accessing the Enrollment System

Currently on the *Broker Workstation Toolbar,* under *PW Applications,* there is a selection for *On-line Client Services.* Under the selection *On-line Client Services,* there needs to be two new menu options:

- PW EDGE Enrollment System
- On-line Trading Enrollment System

If an IE/SA selects either of these options, the system will bring the user to "PW EDGE AND OLT ENROLLMENT SYSTEM."

Need to add access links via Consultworks.

2.3 Function Keys

The following functions should be consistent on each enrollment screen throughout the system and should appear at the bottom of each screen:

- PROCESS
- PREVIOUS SCREEN
- EXIT
- FORWARD
- BACK

2.4 Select a Client to Enroll Screen

This is the first screen displayed to a user. Its function is to allow a user to select a client to enroll.

Using a name search function the system should capture and display all clients with the entered name for a specific broker. A user should be able to enter the client's full first and last name or simply the last name. This process should be USA driven which means that the system should retrieve all clients based on the broker's USA ID. The enrollment system should retrieve all unique clients per USA ID. The IE/SA should also have the capability to "list all clients" which would list all clients available under their USA ID entitlements.

For reporting purposes only, a broker will be required to enter his/her broker number to track enrollments. *(Split broker numbers should not be allowed to be input into this field because it will negatively impact MIS reporting.)*
Also, the Service Group should have operational access associated with their USA ids (SG00) which provides Service Group representatives the ability to view all clients/accounts.

In the case of multiple clients with the same last name, the system should display all clients that met the search criteria. A user should be able to select and indicate which client to enroll or update. Additionally, there needs to be an address field column to differentiate between clients with the same last name.

If there is more than one page of clients retrieved the system should reflect the current page and the total amount of pages found for this search. For example, if the search retrieves three pages of clients, the first screen should reflect "Page 1 of 3."

An asterisk should mark clients who have already been enrolled on the EDGE.

Upon selecting a client to enroll or modify, the user will be brought to the "Client Profile Screen." (See Client Information Screen)

Need to define an identifier to differentiate same name and addresses.

Figure 1:

2.5 Client Profile Screen

After selecting a client, the system should come to the "Client Profile Screen." *(See Figure 2)*
This screen will allow a user to:
- Verify enrollment status for EDGE and On-line Trading
- Verify client information including name, address, social security number (or TIN)
- Modify client information

The following information will be displayed for the selected client:
- First Name
- Last Name
- EDGE Status:
  - Not Enrolled
  - Enrolled
  - Cancelled
  - Same Day Cancel

> **Do we need a re-enrolled status?**
> **What about a history screen for enrollment and the service components?**

- OLT Validated client which should indicate the following:
  - "Yes" if this client has one or more account that is validated for OLT.
  - "No" if this client does not have any accounts that are validated for OLT.
  - "Pending" is the client's agreement has not been processed.
- Social Security Number or Tax Id Number
- Address 1
- Address 2
- Address 3
- Address 4
- City
- State
- Zip Code
- Country Code

A note needs to be displayed on this screen denoting that the displayed address will receive the enrollment information and kits.

Figure 2:

2.5.1   Restricted Countries

Any non-U.S. country should not be able to be enrolled in On-line Trading. If an IE/SA tries to enroll a client that is outside of the U.S. the enrollment system should deny the attempt at enrollment.

In this case the following message should appear automatically at the bottom of the "Client Profile Screen" after selecting the process function: **"Client is not EDGE eligible due to restricted country access."** The user should be denied access to the next screen where the user selects accounts to be activated. If an IE/SA overrides an address to a restricted country, the override should be denied (See Address Override section).

2.5.2   Address Override

From the Client Profile Screen, a user should have the ability to modify the following fields:
- Address: 1-4
- City
- State
- Zip
- Country Code

These fields should be highlighted which will indicates that they are modifiable. Upon selecting process and thus moving to the next screen, a user should be prompted to confirm that the address is correct.

If an IE/SA overrides an address to a restricted country, the override should be denied. The following message should appear if the client tries to override the address to a restricted country: **"Client is not EDGE eligible due to restricted country access."**

In addition to the standard functions defined earlier, a user should also have the ability to select from the following two fields (See Figure 3):

- <u>Restore</u> – This function will return the modified fields back to their original values.

- <u>Modify</u> – This function will keep the modified fields values, but should allow the user to further modify these fields.

If the IE/SA chooses to override an address, the system should capture and maintain:
- Broker number of user enrolling the client
- USA ID of the user enrolling the client
- Original client Values
- Modified Client Values

This information should be readily accessible for compliance and branch purposes.

Any address changes made for OLT will become the permanent address for that EDGE client.

Once the client has been enrolled and their information confirmed by the IE/SA, these fields may not be further modified. Therefore, these modifiable fields will no longer be highlighted and user access should be denied. All further changes will be handled through the Service Center's Administrative Site. (See Administrative Components)

NOTE: When a user is entering performing an address override, the system should check for valid state symbols and zip codes to ensure valid domestic addresses.

<u>Figure 3:</u>

2.6   Account Retrieval Screen

Once the IE/SA has confirmed the mailing information, the enrollment system should bring the user to the "Account Retrieval Screen." This screen will allow a user to add or delete account access to the EDGE and On-line Trading.

If the client has not been previously enrolled on EDGE, the system should retrieve all accounts for this client's CRDB ID.

Once the accounts have been retrieved a user should have the ability to add accounts within their (USA ID) for that client. Hence, if a client is already enrolled on the EDGE, the system should retrieve all accounts for this client's CRDB ID, as well as any accounts manually added by the user.

If multiple pages are retrieved, system should display the first page number and total number of pages. For example, if the enrollment system retrieves three pages of accounts (ten accounts or less = 1 page) for a client, the enrollment system should reflect "Page 1 of 3."

The following are additional required functions for the Account Retrieval Screen:
- Add/Delete All Accounts for EDGE – This function will pre-fill each account status with the appropriate action (Add or Delete) as well as its associated status value (See Statuses below)
- For each account, a user will be required to enter an action for both EDGE and On-line Trading. The action will be "A" to add an account or "D" to delete an account for either EDGE or OLT.

Only RMA, BSA, managed accounts or Premier clients are eligible to be enrolled on the EDGE. The existing validations, which reflect a client's EDGE eligibility on the current enrollment system, should still apply.

If an IE/SA attempts to enroll a client that does not have an account in the CRDB profile that falls into the category of RMA, BSA, managed accounts, or Premier status a message should appear on the screen stating: **"Client is not EDGE eligible."**

For a client who is not EDGE eligible, if the IE/SA manually adds an RMA, BSA, managed, or a Premier status account to the "Account Retrieval Screen," the client should automatically become an EDGE eligible client.

If the RMA, BSA, managed accounts, or Premier status is removed from an EDGE validated accounts, then EDGE eligibility and any associated validated OLT accounts should be automatically cancelled.

The following fields are required for the "Account Retrieval Screen" (see Figure 4):
- Account Number
- Short Name
- Relation
- EDGE Add/Delete Action ("A" signifies Add, "D" signifies Delete)
- EDGE Status
- OLT Add/Delete Action ("A" signifies Add, "D" signifies Delete)
- OLT Status

The available EDGE and OLT statuses are:
- Added
- Active
- Deleted
- Pending (Just used for OLT accounts in which the client agreements has not been processed by New Accounts.)

If the IE/SA selects an OLT account to be added to a new or existing EDGE enrollment, the system needs to check and verify that the account may be validated for OLT. For the first phase release, the system needs to check and verify that the account is an approved PAA account, with a PAA code of (8). If the account is a valid PAA account, the user may "enroll" that account for OLT. The account would now have a status of "pending" for OLT.

If an account is not an OLT eligible account and an IE/SA attempts to validate the account for on-line trading, an error message should appear at the bottom left side of the screen with the following message: **"This Account is Not Eligible For On-line Trading"**

Once, the proper paperwork needs to be received by the New Accounts Department, the account should be coded with the OLT validations of "OT" on CDB and E99-CT6 ("On-line Trading Agreement On File."). At this point, the status will change from "pending" to "active."

If a client closes their OLT eligible account, the on-line trading code of "OT" and E99-CT6, which enables the eligibility, must be removed from the account. For the first release of OLT, if a client closes their PAA account or the PAA account is not renewed, the on-line trading eligibility must be removed from the account as well.

The IE/SA must not be able to revalidate the account through the enrollment system since the OLT eligible code of "OT" and the E99 have been stripped. (Please keep in mind that during the first phase of OLT this will occur if the account no longer has the PAA code of "8".) Hence, if an account has been stripped of it's OLT eligibility status, code "OT" and E99-CT6, the enrollment system should no longer associate the account with an OLT eligibility code of "OT" and E99CT6. The system should also change a validated OLT account, from a status of "active" to a status of "deleted."

Figure 4:

Note: An on-line trading account may be validated for more than one EDGE ID. However, simultaneous trade initiation or cancel order requests must be prohibited.

2.7 Administration

2.7.1 Assignment of EDGE Registration IDs and OLT Passwords

Upon enrollment, the system should assign each client an EDGE Registration ID and if applicable, an OLT Password. This process will differ depending on the "type of client" that is being enrolled. The three "types of clients" are:

- Existing EDGE client enrollment
- New EDGE client enrollment
- New EDGE/OLT client enrollment

If:	Then:
Existing EDGE Client Enrollment	
• Add non-OLT account(s)	• No change in EDGE registration id.
• Add OLT account(s)	• System should generate OLT password and associate it to the existing EDGE Registration ID.
	• System should capture the date as the initial OLT validation date.
	•
New EDGE Client Enrollment	• Assignment of EDGE Registration ID occurs upon enrollment.
	• System should capture the date as the EDGE enrollment date.
New EDGE/OLT Client Enrollment	• Simultaneously assign a new EDGE Registration ID and a new OLT password.
	• System should capture the date as the EDGE enrollment date and the OLT validation date.
	• Link to OLT on EDGE should only be added after E99CT6 has been assigned to the account meaning that the client agreement has been processed.

2.7.2 Fulfillment

On a nightly basis, a file should be sent to the fulfillment center (currently Harte-Hanks) indicating the fulfillment requirements for that batch. Fulfillment will depend on the following three "types of client" enrollments:

- Existing EDGE client enrollment
- New EDGE client enrollment
- New EDGE/OLT·client enrollment

IF:	System Requirements:	Fulfillment Requirements:
Existing EDGE Client Enrollment	In addition to any name or address overrides, the system should retrieve all account(s) for this client per their CRDB Client ID.	
• Add/Delete non-OLT eligible accounts		• Not applicable (No new materials need to be sent to the client)
• Add OLT eligible account(s)	Verifies that this account is coded as a PAA account, code (8). OLT Account shows "pending" status. The link is not available on EDGE for OLT.	• Client should ONLY be sent the OLT enrollment materials (through daily file sent to the fulfillment center.)
	E99CT6 is added after New Accounts processes client agreement. CDB document receipt code of "OT" is also added.	• Link to OLT is now shown on EDGE.
	Enrollment system will activate account(s) in the OLT Status column on the "Account Retrieval Screen." *(See Figure 4)*	
	Enrollment system should now reflect a "Yes" in the "OLT Validated Client" field on the "Client Profile Screen." *(See Figure 2)*	
New EDGE Client Enrollment	Retrieves all account(s) for this client per their CRDB Client ID.	
• Add non-OLT eligible account(s).	Enrollment system will activate account(s) in the EDGE Status column on the "Account Retrieval Screen." *(See Figure 4)*	• Client should ONLY be sent the EDGE enrollment materials (through daily file sent to the fulfillment center.)
	Enrollment system should now reflect the client as "Enrolled" in the EDGE. *(See Figure 2)*	
New EDGE/OLT Client Enrollment	Retrieves all account(s) for this client per their CRDB Client ID.	
• Add non-OLT eligible account(s) & OLT eligible account(s).	Verifies that this account is coded as a PAA account, code (8).	• Client should be sent COMBINED EDGE and OLT enrollment materials (through daily file sent to the fulfillment Center.)
	Enrollment system will activate account(s) in just the EDGE Status with a "pending" status for OLT Status columns on the "Account Retrieval Screen."	EDGE activated for account without OLT link.

IF:	System Requirements:	Fulfillment Requirements:
New EDGE/OLT Client Enrollment (Con't)	Enrollment system should now reflect the client as "Enrolled," and OLT account as "pending" in the "OLT Validated Client" field on the "Client Profile Screen." *(Figure 2)*	
	E99CT6 is added after New Accounts processes client agreement. CDB document receipt code of "OT" is also added.	• Link to OLT is now shown on EDGE.
	Enrollment system will activate account(s) in the OLT Status column on the "Account Retrieval Screen." *(See Figure 4)*	
	Enrollment system should now reflect a "Yes" in the "OLT Validated Client" field on the "Client Profile Screen." *(See Figure 2)*	

2.7.3   Service Cancellation

The IE/SA should have the capability to cancel a new or existing EDGE enrollment. This should be located at the bottom of the "Client Profile Screen." *(See Figure 2)*

If the IE/SA cancels the service the same day as enrollment, the Registration ID generated and the OLT ID generated for that client, must be removed from the nightly file that goes to the fulfillment center. The enrollment system should reflect a message of "Same Day Cancel" in the Status field - only for the current day. The day after the "same day cancel," the enrollment system should reflect a Status of "Not Enrolled." *(Currently, if the enrollment is cancelled on the same day as enrollment, the enrollment materials still go out to the client.)*

If the IE/SA cancels an enrollment after the date of enrollment, the enrollment system should delete all active accounts and deny the client from logging onto the on-line system. This system should reflect the change immediately after the request has been submitted.

2.7.4   MIS Reporting

The dates of both EDGE and OLT enrollments should be tracked and reported within the Service Center's Administrative Tool

The *Daily EDGE Enrollment Report* should be revised to include both EDGE enrollments and validations for OLT.

Monthly *Division Reports* should be generated to include both EDGE enrollments and validations for OLT. *Since the enrollment system does not allow the input of split broker numbers, reporting should be based on individual broker numbers only.*

2.7.5 Account Inquiry

On Account Inquiry, an indicator should be added to all accounts that are validated for on-line trading. Currently, an EDGE account is denoted with the text "EDG" on Account Inquiry. If an account is now validated for on-line trading, which also means they are validated for the EDGE, the text should replace "EDG" with "OLT." Thus, for EDGE only accounts the "EDG" text will still appear on Account Inquiry. However, for those accounts validated for both EDGE and on-line trading the text "OLT" will appear.

3 Selected Front-end Components

3.1 Premier Asset Account Activity

The On-line Trading Home Page will have a link for PAA clients to view information about their account. The following details those fields that must be incorporated into this account activity screen. Many of these fields are updates on a quarterly or monthly basis. As a Phase I release for on-line trading they will need to be updated on a nightly basis. These fields will be updated on a real-time basis for Phase II.

These fields may be obtained from the Managed Accounts System for Trade Tracking (MAS-TT).

3.1.1 Eligible Trades

MAS-TT Fields	Currently	Changes for PAA Account Activity
Account Number & IE	Client's account number and IE #	• No changes
Maximum Trades	This is based on the initial investment for one-year plus/minus contributions and withdrawals. This is calculated quarterly.	• **Phase I**: This should be calculated on a **nightly** basis based on contributions and withdrawals. *(If market value of the portfolio goes up, PAA dept. will not penalize the client for withdrawals from the account. This is a sub-contract from MAB.)* • **Phase II**: This field will be calculated and updated on a real-time basis upon any client deposits or withdrawals.
Trades Made	This is based on the number of eligible trades that the client has executed in the account. This is calculated quarterly. *(Note: An order executed throughout multiple days will count as multiple trades.)*	• **Phase I**: This should be calculated on a **nightly** basis for **executed** orders. • If a client is going to exceed his maximum trades, the client should be reminded at this point, that he/she might be charged a supplemental fee. (The supplemental fee depends on if the client deposits enough money to bring them to the next PAA grid level.) • If a client has open orders, the client should be reminded at this point that they have open orders waiting to be executed. This way, before the client enters their next trade, they are aware that they may exceed their allotted trade amount if the open order is executed. *(This should work like the current Open Orders page off the EDGE Securities Activity screen – the link should only appear if there are open orders for a specific account.)* • **Phase II**: This field will be calculated and updated on a real-time basis.

MAS-TT Fields	Currently	Changes for PAA Account Activity
Trades Over	This is based on the number of eligible trades that the client has executed beyond the allotted amount allowed for the account. This is calculated daily.	• **Phase I**: This should be calculated on a daily basis for **executed** orders. • **Phase II**: This should be calculated on a **real-time** basis for **executed** orders.
Supplemental Fees	This is based on trades made over the allotted amount of trades. The supplemental fee is a commission calculated at a 25% discount. This is calculated daily and is an estimated figure.	• No changes • OLT must put a disclaimer explaining that this is just an estimate. If the client contributes money to the account, and this deposit moves the client into the next trade grid level, this supplemental fee will decrease.
Commissions Waived	This is also an estimated field. If a client deposits/withdraws money into or from the account then the commission waived may increase/decrease.	• No changes • OLT must put a disclaimer explaining that this is just an estimate.
Start Date	This is the first quarter for which a client begins their PAA period. *(If it is a clients first year with PAA, then the start date equals the day the account was opened / approved for PAA. After the first year, the client's start date equals the quarter beginning the client's annual PAA period.)*	• Change the field name to "Open Date."
End Date	This is the renewal date for their PAA accounts. This is the last day of the 4th quarter of their annual period.	• Change the field name to "Renewal date"

3.1.2   Ineligible Trades

MAS-TT Fields:	Currently:	For On-line Trading's PAA account/status page:
Trades Made	These include orders for Mutual Funds, UITs, etc., that are do not count towards the PAA allotted trades.	• **Phase I**: This should be calculated on a **nightly** basis for ineligible **executed** orders. *(A mapping to Managed Accounts eligibility tables for PAA should occur.)* • **Phase II**: This should be calculated on a **real-time** basis for **executed** orders.
Commission Billed		• No changes

3.2   Quote User Screens & Fields

3.2.1   Delayed Quote Screen

The following fields should be initially displayed to an on-line trading client when the initiate a quote lookup. At this time of order entry, the quote will be a delayed quote:

- Symbol
- Last Trade Price
- Last Trade Time
- Last Trade Date
- Change
- Tick
- Bid
- Ask
- Volume
- Open
- Day's High
- Day's Low

For the delayed quote screen, a header at the top of the screen is needed to inform the client that they are viewing a delayed quote.

3.2.2   Real-time Quote Screen

Upon viewing the Trade Recap screen, a real-time quote will be displayed along with the other trade information. The following fields, in addition to those above, should be displayed:

- Security Type
- Bid Size
- Ask Size
- EPS
- EPS Date
- P/E Ratio
- Exchange
- 52 Week High
- 52 Week Low
- Dividend
- Dividend Payout Date
- Current Yield
- Previous Close Price

For the real-time quote screen, a header at the top of the screen is needed to inform the client that they are viewing such a quote until market close. Then the header should read "market closed" while displaying the "As of" date and time.

4   Administrative Components

4.1   Service Center

4.1.1   Overview

The PaineWebber Service Center will require various support tools that will allow a representative to properly handle various client inquiries regarding on-line trading. Currently, the Service Center utilizes the Administration Site consisting of EDGE-related support tools. It is these tools that will be modified to support on-line trading. The existing administrative tools include:

- **Administration Site (Admin)**
  Required modifications to:
    - ➢ Account Profile
    - ➢ Maintenance

- **Enrollment System**
    - ➢ (Please see section under Enrollment)

- **Vantive**
  Required modifications:
    - ➢ Category
    - ➢ Topics
    - ➢ Sub-topics

    Note: This task is undertaken a few weeks prior to launch due to ease of implementation and is not defined at this point.

- This Administrative Site will also have access to a modified EDGE On-line Trading system. This tool will enable a Service Representative to simulate order entry as well as viewing trade summary information for validated accounts.

- Additionally, the site will include access to the new BOE screens being created for on-line trading that allows brokers to keep abreast of client activity. (Please see Investment Executive Playback and Messaging section for the new BOE screens.)

4.1.2   Required Modifications to EDGE Administration Tools (Admin Tool)

4.1.2.1   *Account Profile*

This is the most commonly used portion of the current administration site. The following are modifications to Account Profile that are required to support on-line trading:

4.1.2.1.1   *Status Field*

This field notifies a service representative as to the status of an EDGE client (e.g. active). Currently, there are five status messages that determine the activity of an EDGE client. They are:
- ➤ "Inactive"
- ➤ "Disabled"
- ➤ "Active, no activity"
- ➤ "Active, has signed up"
- ➤ "Active, has logged on"

Modifications:
- The status field should be redefined as two categories:
  - ➤ 1st should be titled "EDGE" which reflects a client's EDGE access status.
  - ➤ 2nd should be titled "OLT" which will reflect a client's status for on-line trading.

- The current EDGE status messages should be updated to reflect the updated status messages defined on the IE Mirror. These new status messages for EDGE are as follows:

Status Message	Definition
Not Enrolled	No enrollment date or SSN. Not enrolled in EDGE.
Disabled	EDGE access temporarily disabled by the Service Center.
No EDGE Activity	Client has been enrolled but has not signed up or logged on to the EDGE.
First Time Only	Client has completed first time sign up but has not logged on since.
Active EDGE User	Client has logged on to the EDGE.

- The OLT *Status* messages should be as follows:

Status Message	Definition
Not Enrolled	Not validated for on-line trading.
Pending	Account has been "enrolled" put agreement has not been processed. (Link on EDGE has not been added.)
No OLT Activity	Client has been validated but has not completed the first time sign-in.
First Time Only	Client has completed first time but has never submitted an order.
Active OLT	Client has submitted at least one order.
OLT Disabled	OLT access has been disabled for this account.

4.1.2.1.2 *"Send an Enrollment Kit" Button*

Currently, by using this button, the Registration ID is linked to the Address Editor and a re-mailing of the EDGE enrollment kit is generated in a nightly file and processed by Harte Hanks.

Modifications:
- The button name needs to be changed to "Re-send Enrollment Materials."
- By clicking on the icon, "Re-send Enrollment Materials" a service representative will have the following options to chose from:
  - ➢ EDGE
    - ➢ Kit
    - ➢ Registration ID Letter
    - ➢ All
  - ➢ On-line Trading
    - ➢ Kit
    - ➢ Registration Letter
    - ➢ All

If there is not a validated on-line trading account associated with the client, the OLT selections should be "grayed" and access to these selections should be denied.

- Additionally, this screen should also display a mailing history for Service Representatives to view. A table, entitled "Mailing History," should display the following:

Mailing Type	Mailing Item	Mailed When	Mailed Where
Original	EDGE Kit	3/21/1998	1234 Oak Lane, NY,NY 07087
Re-mail	EDGE Kit	4/1/1998	1234 Oak Lane, NY,NY 07087
Original	OLT Kit	6/1/1999	555 5th Ave, New York, NY 10000

Type: will be "Original" or "Re-mail" depending on whether it was the original documentation or a subsequent mailing.
What: will be which material(s) were sent for that particular mailing:
- EDGE Kit
- EDGE Reg
- EDGE All
- OLT Kit
- OLT Reg
- OLT All

For each piece of material, there should be a separate entry on the table.

When: is the date that the enrollment kit was sent out by Harte-Hanks.
Where: is the address to which the enrollment materials were sent.

Service Reps must be entitled to have access to this function.

4.1.2.1.3 Enrollment Date

Currently, this field displays the date the client was enrolled on the EDGE.

Modifications:
- This field should be redefined as two fields:
    - ➢ "EDGE Enrollment Date" which indicates the date the client was enrolled on the EDGE.
    - ➢ "OLT Enrollment Date" which indicates the date an account was validated for on-line trading. This field should show both the validation date and its associated account.

4.1.2.1.4 Signup Date

Currently, this field indicates the date the client was successful in logging onto the EDGE as a 1st time user.

Modifications:
- This field should be redefined as two fields:
    - ➢ 1st should be "EDGE Signup Date" which indicates the date the client was successful in logging onto the EDGE as a 1st time user.
    - ➢ 2nd should be "OLT Signup Date" which indicates the date the client successfully changed their on-line trading password for the 1st time as a new user.

4.1.2.1.5 Last Login Date

Currently, this field indicates the last date the client logged on to the EDGE site.

Modifications:
- This field should be redefined as two fields:
    - ➢ "EDGE Last Login Date" which indicates the last date the client logged on to the EDGE.
    - ➢ "Last OLT Order Submitted" which indicates the last date and time a client submitted an order through EDGE On-line Trading.

4.1.2.1.6 Active Accounts

Currently, this field lists all active accounts for EDGE. This field also labels an account "disabled" if the account was disabled through the *Maintenance* function of the Admin Site.

Modifications:
- An indicator should be added to the right of an EDGE account validated for on-line trading. The indicator should be "OLT." For example, in the list below the OLT validated accounts are marked as follows:
  - AB 12345
  - AB 34567 (OLT)

- If an EDGE account is disabled, which currently occurs, the "OLT" indicator should be removed and replaced with the existing "disabled" indicator for an EDGE account.

4.1.2.2   Maintenance & Passwords

The existing Maintenance function within the PaineWebber EDGE Admin Tool allows a Service Representative to; reset a client's password, disable EDGE accounts, and modify a client's address. Currently, all representatives are validated to reset a client's password, with additional entitlements needed to disable EDGE accounts modify addresses. The same entitlements are needed for a representative handling on-line trading.

The following are the required changes to the current *Maintenance* link.

4.1.2.2.1   Passwords

There needs to be a new password generated for on-line trading. This password must be separate and not synchronized from the existing EDGE password. However, a user will have full control over changing the password at any other given point. The new password should be their full social security number that will be mailed to them as part of their registration letter. If a social security number does not exist, a 9 digit random number should be generated.

Initially, a client will be provided an alphanumeric password upon enrolling in on-line trading. The client will be required to customize this password upon entering the application for the first time. The client will have the ability to change this password either through the application or through the Service Center.

If a client incorrectly inputs their password three straight times, they should be locked from entering the system. They will be required to unlock their password through the Service Center. The client will also have the ability to change their password directly from the site but would need the existing password in order to accomplish the task.

4.1.2.2.2   Reset Client Passwords

Currently, by submitting an EDGE Registration ID or an EDGE Username, a representative may reset a current password back to the default password, which are the last four digits of the client's social security number.

Modifications:
- Prior to inputting the client's Registration ID or Username, a representative should select which password they intent to change: EGDE or On-line Trading.

- Representatives will still be required to input the client's Registration ID or Username.

- If the representative selects EDGE, the current reset password link should be displayed with its associated functions remaining intact.

- If the representative selects On-line Trading, a screen entitled "Client's On-line Trading Password" will be displayed with the following information:
    - Registration ID

- Username
- A field indicating how many times a client's password has been changed.

- Within this screen, a user will have three options:

  - **Reset password to original** – This feature would reset the password back to the original value when the user first enrolled in on-line trading. This is helpful if a client forgets their password but has retained their registration letter with the original password. The password must rest immediately after a user has submitted the reset password request.

  - **Unlock password** – This feature is to be used after a client has entered their password incorrectly three times and has been locked. This feature will unlock the application immediately and allow the user to enter the existing password. If the client correctly enters the password they will gain access. If not, the system will lock after three incorrect entries. The password must unlock immediately after a user has submitted the unlock password request.

  - **New password** – This feature will assigns a new trading password. A message should be displayed indicating that the new password will not be displayed for security purposes. A message should be displayed indicating that the new password has been generated and that a registration letter will be mailed to the client. Upon receipt of this letter the client will be required to customize their password as if they were entering the system for the first time.

4.1.2.2.3 Enable / Disable an Account

Currently, by submitting an account number, a representative may disable an account. This action is only in affect for the current day only. Once an account has been disabled, the representative has the capability to re-enable the account.

The same functions will need to exist for on-line trading accounts. Upon disabling an account for on-line trading, the trading link will no longer be an option through EDGE for that user.

Modifications:
- The Action function should be changed to the following:
  - EDGE
    - enable
    - disable
  - On-line Trading
    - enable
    - disable

Note: The disabled action should **not** be current-day only. Rather, once the account(s) have been disabled, it should remain as such until it is re-enabled.

4.1.3   Additional Utilities to Support On-line Trading

4.1.3.1   On-line Trading System

The PaineWebber Service Center will also need to have access to EDGE On-line Trading. The current link to the EDGE from the Admin tool should now include "On-line Trading" as an option from the EGDE Home Page.

As a "Super User," selected service reps should have the ability to view any account. The ability to validate certain USA IDs to become this type of user is necessary. The following should occur when a representative selects *On-line Trading* from the Admin menu:

1. The representative should be prompted to enter an on-line trading validated account.
2. The system should then search for the Registration ID(s) associated with the validated account.
3. All Registration IDs and clients associated with the validated account should be displayed. The representative should be able to select which ID/client they are servicing.
4. Once the client has been selected, the On-Line Trading Home Page should appear. (Please see the Design Document for Home Page)

4.1.3.1.1   Trade Summary

As part of the Trading system the Service Center should have access to the trade summary. However, the Service Center version should have a date sort that allows them to view activity for the previous seven calendar days. Hence, historical data needs to be maintained for the previous seven calendar days to be viewed through this function.

4.1.3.1.2   Order Entry

As part of the Trading system the Service Center will need to have access to the order entry screens. Representatives will need the ability to enter and submit orders on behalf of clients. However, there needs to be validation options in which representatives could be activated or deactivated for the order entry function. Representatives who are not validated for order entry would not have the ability to submit a trade. They would have the authority to enter an order up to the point of submission. However, the submit button would not send the order to be executed.

4.1.3.2   Broker Order Entry

Service Representatives should have access to the *On-line Trade Exception Screen* that is being created for Investment Executives. This screen is necessary for representatives in order to view the edit checks that may occur for on-line orders. (Please see the Investment Executive Playback and Messaging section.)

Another menu item needs to be added to the Admin menu for this option. When accessing this screen, a representative should have the ability to input any account number in order to see the orders submitted. Additionally, the broker's ID for that account should be displayed.

4.1.3.3 Vantive
Categories to be defined prior to release.

4.1.4   Management Information Reporting

These tools will allow PaineWebber to gain a better understanding of its clients' usage patterns for electronic delivery of orders. This should be a web-based on-line report writer system in which reports may be generated ad hoc.

4.1.4.1 Event Reporting
- All reporting for events will be by account and in total monthly.
- Login Events
- Entered Trading Demo
- Entered Trading Demo Wizard
- Entered Stock Trading
- Entered Stock Trading Wizard
- Entered Trade Summary from Home Page
- Entered Trade Summary from Order Recap
- Entered PAA Activity
- Entered Change Password as a new user
- Entered Change Password as a non-new user
- Entered Stock Trading and hit Clear
- Did not place order after going to Order Recap Screen
- Sent order after going to Order Recap Screen
- Entered New Trade from Order Recap Screen
- Entered Detail Screen

4.1.4.2 Management Reporting
- Number of On-line Trading accounts, households
- Number of orders per account, per household
- Number of orders by Type per account, per household
- Types of orders by Security per account, per household
- Total Principal Amount
- Total Quantity
- Number of orders that enacted Hard Edits by Hard Edits per account, per household
- Number of orders that enacted Alerts by Alter per account, per household
- Number of Full Cancels per account, per household
- Number of Partial Cancels per account, per household
- Number of Cancel/Replaces per account, per household
- Total assets per on-line trading account, per household
- Average assets per on-line trading account, per household

4.1.5   Other Administrative Requirements

4.1.5.1 Pricing

4.1.5.1.1 Supplemental Fees

All Premier Asset Accounts are eligible for a specific allotment of trades per year depending on a clients asset level. Upon depleting this allotment, the client will be charged a 25% discount to normal PaineWebber commissions for Equity trades. For the on-line system, a client will be made aware through an intrusive alert message when entering the order that will deplete their allotment. The message will indicate that the order will be charged at a t 25% discount. The client will have the ability to continue entering the order or abort.

This supplemental fee will be charged at the end of the quarter in which the annual trade allotment is depleted and additional trades are made. It will be charged in each subsequent quarter, if more trades are made, through the end of the client's annual period.

The trade allotment figure will be made available on-line to all PAA clients that are validated for on-line trading. This trade allotment is reset at the end of the client's annual period. This display will also detail number of trades used and number of trades remaining as of the previous business day.

4.1.5.2 Billing

Clients who have PAA accounts do not pay commission charges for every trade they initiate. Instead they pay an annual fee that is derived as a percentage of their assets held at PaineWebber. In return for this annual fee, the client receives a set number of trades that can be used over a twelve (12) month period.

If at any time the client trades beyond the allotted set number of trades, they will incur supplemental fees. These supplemental fees are calculated at a 25% discount from current PaineWebber commission prices.

The on-line trading product will recognize the number of trades that a client is permitted under their fee schedule. The client will receive a running balance of number of trades allotted as well as the number of trades remaining.

If the client does trade beyond the original set number of trades, the supplemental trades will be run through the existing billing mechanism for PAA. This system already has the client's trade package coded and recognizes when supplemental trades occur and how they should be charged.

The design and development of the on-line trading system does not include plans to develop or alter the existing PAA billing mechanism. The new on-line trading system will leverage existing architecture and not require any development.

4.1.5.3 Statements and Confirms

The statements and confirms that clients receive today detail each individual trade. Clients who enter trades through the on-line trading system will have those trades marked as "On-line" on their statements and confirms.

Note: Each client initiated on-line order that is placed must be tagged systematically with an identifier on the existing trade file that will filter throughout the trade processing and inquiry systems. Systems that will display trade information and indicate whether the order or trade is a on-line client initiated include:
- Statements
- Confirms
- Trade Monitor
- Account Inquiry
- BOE Trade Screens
- DORS Trade Summary
- EDGE and OFX
- EDGE and OFX IE Mirror
- EDGE and OFX Admin

This will allow field and service center representatives to accurately and quickly recognize what is a client vs. broker entered trade.

This is a sensitive client service issue, as clients will want to know what trades they initiated versus the trades that the broker entered.

- What are Legal and Compliance requirements for statements and confirms?
- What about the broker of record in terms of splits?

4.1.5.4 System Availability

The ultimate goal for EDGE On-line Trading is to have the system available to clients seven (7) days a week, twenty-four (24) hours a day. However, many of the mainframe applications that would need to be accessed are unavailable at all times. While Phase I will not be 24x7, the system should be close to this goal. It is approximated that system availability may meet 22x6. Regardless, system availability means that a client must be able to access the on-line trading link and be able to submit an order even when the market is closed. All orders entered when the market is closed will be warehoused until the open. Obviously the order will not be transmitted to the exchange until the market opens. If a client enters an order during non-trading hours when the market is closed, the system should warehouse the order but still edit the order as if it was placed during market hours. This will ensure that the order will not be blocked by the on-line edit checks when the market opens.

4.1.5.5 Access

Only Premier Asset Account clients will have access to on-line trading. To gain access, a client must have be enrolled in the EDGE and have a managed account status of "8." Additionally, for client service purposes, "Super Users" for predetermined USA IDs needs to be allowed. For specific USA IDs, these users will have the ability to view and enter trades as for all accounts.

5   Edit Checks & Validations

5.1   Overview

EDGE On-line Trading features two types of edits and validations: Syntax edits and Business edits. Syntax edits are performed by the front-end to validate data entry such as alpha or numeric data, required fields, and valid symbols or security numbers for the various types of orders. Syntax edits will be presented to a user at the time of entry.

The business edits validate specific account/trade-related items such as E99 messages. There are two categories of business edits: Hard and Alert. Hard edits block an order from being entered. For each Hard Edit the user will be directed back to their respective Investment Executive via a playback message. Alert edits prompt the user that a condition exists and allows the order to either be entered or aborted.

Appendix A defines the various trade and account edits for EDGE On-line Trading as well as detailing whether these edits exist on BOE and DORS order entry applications. The matrix details Hard and Alert edits to the client and their associated messages. The matrix also defines which edits will be received as intrusive alerts and which edits will be displayed in the Branch Manager Review Screens as well as which alerts may be optionally obtrusive.

Note: Edit checks should be developed as completely configurable. This means that each edit should be easily modifiable for each facet of the edit check definition. (e.g. No order greater than 15,000 shares allowed. This is a hard edit to the client in which the IE may not turn off. The edit will also incur an intrusive alert to the broker. While this is the edit definition, any of these pieces may be modified upon approval.)

5.2   Syntax Validations

These are front-end edits that validate each field of the on-line application for various criteria such as numeric data, valid codes, and certain combinations with other fields. (Please see the Reality On-line Functional Document.)

6   Investment Executive Playback & Messaging

6.1   Overview

Investment Executives will need to be kept abreast of their client's activity. BOE will display all on-line client orders and trades in the existing BOE Open Order and Trade Summary Screen. Additionally, all on-line client orders in which an edit was enacted (hard or alert) will be displayed in a new On-Line Trade Exception Summary Screen.

Investment Executives will also receive Intrusive Alerts via the ConsultWorks Alert Messaging System on certain edits triggered by a client attempt of an on-line order. These intrusive alerts will indicate to the broker that their client received an edit and was blocked from entering an order. Some of these intrusive alerts will be optional, as a broker will have the ability to make them non-intrusive. Drop copies will be available for all on-line executions as well as changes, full cancels, and cancel replace orders.

Additionally, authorized personnel will have the ability to customize the various edits on an account level basis.

Note: Each client initiated on-line order that is placed must be tagged systematically with an identifier on the existing trade file that will filter throughout the trade processing and inquiry systems. Systems that will display trade information and indicate whether the order or trade is a on-line client initiated include:

- Statements
- Confirms
- Trade Monitor
- Account Inquiry
  - (Note: Potentially use trailer record to handle on-line trades.)
- BOE Trade Screens
- DORS Trade Summary
- EDGE and OFX
- EDGE and OFX IE Mirror View
- EDGE and OFX Admin.

Additionally, each order must record the EDGE Registration ID.

6.2   On-line Trade Exception Summary Screen

Brokers will have access to a trade summary screen that displays all client on-line orders that have received either a Hard or Alert edit. The primary purpose of this screen is to inform the broker that a client experienced an edit during order entry and may need assistance. This will allow the broker to act in a proactive manner when dealing with the client.

A broker will be able to access this screen from BOE's main menu. Hence, a new menu option has to be added to the existing BOE main menu. Entitlements should remain the same as it exists currently for BOE. All USA security levels will have access. On-line trades and orders should only be displayed for associated IE#'s only. Similar to BOE Trade Summary, an IE should only be able to see those trades and orders that they are entitled to view.

6.2.1   Summary Screen

When a user accesses this screen, they will be presented with summary information. The fields detailed on the screen are as follows:
- Symbol
- Action (i.e. buy or sell)
- Order Quantity
- Order Type
- Time and date stamp of when the order was placed (Original Order Entry Date/Time)
- Hard or Alert edit message (i.e. Cannot exceed 15,000 shares). If more than one edit was enacted for an order, the first edit enacted should be displayed with an indicator that there is more information available on the *detail screen*. (Please see Exception Detail Screen below.)
- Account #
- Status (Rejected or Accepted)

All orders should be listed in order by account as the primary key, date as the secondary sort, and then by symbol. Orders should be retained and aged for TBD – online as well as offline.

Filters included at the top of the screen should be:
- **Trade Date**: There should be "from" and "to" fields listed with the current date in both fields as the default. Users should be able to view up to seven previous calendar days.
- **Account #**: Should be passed from the toolbar for intrusive navigation.
- **Broker #**: The default should be the # of the broker that is currently logged on to that workstation.
- **Symbol**: No default.

A user should be able to sort on any combination of the above fields.

The following function keys should be enabled for this screen:
- Return to BOE Main Menu
- Go to Exception Detail Screen: To access the detail screen, a user should select a specific order by moving the cursor using tabs to the selected row and by pressing this function key.
- Page Up or Previous Screen and Page Down or Next Screen
- Go to Trade Summary
- Go to Order Entry

6.2.2 Detail Screen

A function key should be available for a user to access the On-line Trade Exception Detail Screen. Similar to the existing detail screen for the BOE Trade Detail with its "boxed" page layout, this screen should display order detail information with the following labels and their associated data elements in a text box titled On-line Exception Trade Detail:
- Buy or Sale
- Suitability: (Unsolicited or Solicited)
- Quantity
- Status
- Order Type
- Qualifier: (This should detail DAY, GTC, etc. The unsolicited or solicited fields should have their own title as shown above.)
- Entry Date
- Entry Time
- Trade Date
- Settlement Date
- IE#
- Account #
- Short Name
- EDGE related Client Name
- EDGE related Client Phone Number
- Trade Sequence #

In another text box titled Edit Messages, all edits enacted during order entry should be listed. While only 6 edits per screen will be visible, a scroll down bar should be available to view all edits.

Function keys to return to the exception trade summary and BOE main menu should be enabled.

Note: In situations where there are broker split numbers, each broker on the split should have be able to view all on-line orders and trades on all screens. This rule should be held throughout where on-line orders and trades are displayed.

6.3 BOE Open Order and Trade Summary Screen

6.3.1 Trade Summary

This existing screen on BOE needs to incorporate all On-line Trading orders and trades that have not been "blocked" by the OLT hard edit checks. The OLT orders and trades should be displayed in the same manner with the same fields in their associated columns as orders and trades are currently presented.

To indicate the order or trade is a client initiated on-line trade the entire row for that order or trade should be highlighted.

6.3.2 Trade Detail

For client initiated on-line trades and orders the Trade Detail text box needs to be modified. First, the text box needs to be entitled On-line Trade Detail.

Then, the unsolicited and solicited status fields are currently displayed as part of the QUALIFIER field. These statuses should be displayed in a separate field entitled Suitability. This field should be listed first within the detail text box.

6.4 On-line Trading Edit Check Override Screen

A new application, On-line Trading Edit Check Override, is needed. By using this stand-alone application, client edits for on-line orders can be altered dynamically by authorized personnel without having to modify, test, and release a new version of the application. These edits may be customized on an account level. Additionally, this application may be used to customize which edits initiate an intrusive alert to the broker.

On-line Client Order Edits are of two types: a) "hard" edits that block an order with no override and b) "alert" edits that are informational only (e.g. Opposite order exists) and will allow a client to continue entering the order or abort. Certain edits may be set to active or inactive and may be configurable while others will be hard coded and may not be changed. If active, the edit will be in effect and will be triggered if an order meets its conditions. If inactive, the on-line order will not be checked against the edit.

Please refer to Appendix A – Edit Check Matrix for the actual logic behind each edit and their configurable options.

Upon entering this screen, a user will need to enter their broker # and a client's account #. The broker # default should be the # of the broker already logged onto that workstation. After entering the account #, all of the edits and their validations will be displayed. The fields displayed should be as follows:

- Edit #
- Edit Definition
- Type
  - Hard
  - Alert
- Configuration:
  - Active – The edit is active and could be enacted on a client order.
  - Inactive – The edit is deactivated and will not be enacted on a client order.
  - Tiered Levels: Certain edits will have a tiered levels that will be configurable (i.e. 15,000 shares or greater not allowed.)
  - **Note**: This is a modifiable field. Certain edits will be hard coded and will not be able to be changed. Please see Appendix A – Edit Check Matrix.
- IE Notification
  - Intrusive
  - Not Intrusive
  - **Note**: This is a modifiable field that will be handled by the Consultworks Alert Messaging System. Certain edits will be hard coded and will not be able to be changed. Please see Appendix A – Edit Check Matrix.
- Last Update Date
- Last Update Time
- Last Updated By: Displays USA ID

Specified USA IDs will validate certain users to gain access to this application. Two types of validations are needed; inquiry and update. Inquiry users will only have the ability to view the fields. Update users will be able to actually modify information.

After making any changes to the edits on this screen, a user will have to input their USA ID and Password to save the changes. This should be a double validation and confirmation effort. The user should input their ID and Password that would be validated. The user would then be prompted with "Please press Enter to confirm changes." This will help protect the integrity of the changes.

Function keys for this screen should include:
- Restore – This will restore the screen to its original values prior to the user saving any entered changes.
- Backward
- Forward

6.5 Account Inquiry

Currently, all orders and trades are displayed within the *Activity Page* and *Open Orders Page* on the Broker Workstation. Since all electronic orders will be processed through the existing PaineWebber infrastructure they will be captured and displayed here as well. However, these pages must indicate which orders and trades were entered on-line by using the text, "EDGE ORDER." This should be accomplished by placing this text in the order trailer record.

Currently, an EDGE account is denoted with the text "EDG" on Account Inquiry. If an account is now validated for on-line trading, which also means they are validated for the EDGE, the text should replace "EDG" with "OLT." Thus, for EDGE only accounts the "EDG" text will still appear on Account Inquiry. However, for those accounts validated for both EDGE and on-line trading the text "OLT" will appear.

6.6 Trade Monitor

Currently all orders and trades are captured and are displayed within Trade Monitor for review by Branch Managers or a Series 8 designee. Again, since all electronic orders will be processed through the existing PaineWebber infrastructure they will be captured and displayed here as well. However, these pages, specifically Daily Trade Review, must indicate which orders and trades were entered on-line.

Hence, if an on-line trade violates an existing Daily Trade Review check, that order will be displayed within the appropriate bucket for review. As with Account Inquiry, the displayed trade will have an indicator that it is an on-line entry by using the text, "EGDE ORDER." Again, the order trailer record will hold this text.

What is the effort to put a new bucket into Trade Monitor for all OLT orders?

6.7 Drop Copies

Currently, for all broker-entered orders drop copies are printed at each branch for: orders and executions, and for corrections such as full and partial cancel and cancel/replace. On-line trading will require similar drop copies to be printed at the branch.

For client-entered orders, the existing drop copies for orders, executions, full and partial cancels, and cancel/replace will need to be printed at the branch in their existing form except for the following changes:

- The "Entered By" field that currently displays the Broker # will be replaced with the text "EDGE."

- The Broker # is still part of the full account number that includes the 2 digit Branch Wire Code (i.e. DM) as well as the 2 digit Broker # (i.e. 01). However, if there is a split number associated with that on-line trading account, each four digit Broker # (i.e. DM01) that is part of the split needs to be displayed on the drop copy. The Broker #'s should be displayed on the line underneath the field "Account Number" with the text of "Broker #:" The following is an example:

ACCOUNT NUMBER	TYPE	SHORT NAME
DM 00082 01	1	ROTEN AL
BROKER #: DM01,DM02,DM03,DM04,DM05		

- There should be a header across the top of each drop copy for on-line orders that states "EDGE ONLINE TRADE" for example:

EGDE ONLINE TRADE   EDGE ONLINE TRADE   EDGE ONLINE TRADE

- Additionally, since on-line trading orders will have text ("EGDE ORDER") in the trailer record, this text should appear in the MISC LINE that displays miscellaneous text. No additional effort should have to be done since this field already displays the order trailer record text.

6.8 Alert Messaging

Brokers will receive intrusive and optionally intrusive alerts via Consultworks. These alerts are based upon the edit checks that will be applied to client entered order via on-line trading. Each edit is defined as to whether or not it is intrusive or optionally intrusive in Appendix A – Edit Checks. As a note, all client-entered orders will require an alert to the IE.

While each edit has specific text that describes the edit for the broker, these descriptions are to be displayed in the BOE Trade Exception Screen. The Consultworks Alert Messaging System will display generic messages to the broker that notifies them that something has occurred with an on-line client order. The IE will also be directed to the appropriate application to se more detail.

The following defines the requirements for how the Consultworks Alert Messaging System should handle the on-line trading alert messages.

For both types of alerts there will be four separate "Categories." They are:
- EDGE OLT BLOCKED ORDERS
- EGDE OLT ACCEPTED ORDERS
- EDGE OLT EXECUTION
- EDGE OLT REJECTED

The "Subject" for the orders should be as follows:
- Blocked Orders: <7 digit client acct. #> EDGE ORDER BLOCK
- Accepted Orders: <7 digit client acct. #> EDGE ORDER OK
- Executions Orders: <7 digit client acct. #> EDGE ORDER EXE
- Rejected Orders: <7 digit client acct. #> EDGE ORDER REJECT

The Intrusive Alert message for Accepted Orders should be as follows:

The Intrusive Alert message for Executed Orders should be as follows:

The Intrusive Alert message for Rejected Orders should be as follows:

The Intrusive Alert message for Blocked Orders should be as follows:

These new alert categories and subject should be used for cancel, full cancel, and partial cancel orders. However the "free text" within the alert should be as follows:

- Full Cancel

- Partial Cancel

- Cancel/Replace

7   Business Rules

7.1   Overview

In order to allow client to trade on margin through the on-line trading system and to provide appropriate credit risk management, the following business rules and calculations apply. Both the business rules and the calculations take into consideration a conservative approach that would prevent the client from placing themselves and PaineWebber at risk.

7.2   Business Rules

- **Equity Securities Only**
  - ➤ The first phase of the on-line trading system will only permit trades of equity securities. Mutual funds will be incorporated in a proposed follow-up 1A release.

- **On-line trading clients may only trade Type 1 (cash) and Type 2 (margin) activity through on-line system.**
  - ➤ All other activity will be prohibited from on-line trading. These include:
    - Type 0 – Personal Security Loan Account (not governed by Reg T)
    - Type 4 – Short Account
    - Type 5 (Fees) and 6 (LOC) – not trading accounts
    - Type 7/9 – Commodities (International and Domestic)

- **Upon order entry, if a security is marginable and the user has a margin agreement on file, the order should be processed as margin activity. If the security is not marginable the order should be processed as cash activity.**

- **Upon order entry, a user must respond to a question asking if the order is a result of a recommendation from their PaineWebber IE. If answered "Yes" the order should be processed as solicited. If answered "No" the order should be processed as unsolicited.**

- **In Cash Account, clients will not owe money through on-line system.**
  - ➤ Systematic restrictions will be put in place that will not allow clients to buy more securities than the cash that they have in their Cash account.
  - ➤ If the Cash account also contains securities in Type 1, these securities will **NOT** be included in the dollar amount that the client is able to purchase.

- **In Margin Account, client will not enter into Fed or House Call through on-line system.**
  - ➤ Systematic restrictions will be put in place that will not allow clients to enter into a PaineWebber House call or Fed call position. Clients will be able to trade up to the value of their intraday calculation power for marginable securities.

- **Non-marginable securities are defined with an exchange code of "9" on the security glossary.**

- **Client cannot sell securities not held at PaineWebber (Sales not long).**
  - ➢ Clients will not be permitted to sell securities that are not held in their PaineWebber account through the on-line trading system.

- **Day trading**
  - ➢ Clients will be permitted to day trade an individual security as long as the appropriate funds and/or buying power are able to cover the purchase of the security. If the funds are not available or adequate, the trade will then be blocked. However, if a client buys a security to generate a new position, currently the client will not be able to sell that security the same day he bought it because the security has not shown up yet on the holdings profile for that client.

- **OTC Buys less than $5 per share not permitted.**
  - ➢ OTC buys less than $5 per share is a significant credit issue and will be incorporated as a front end and back end edit check.
  - ➢ Numerous edit checks will be built into the front end and back end of the on-line trading system. The edit checks will filter out many different trade scenarios that will not be permitted through the on-line trading system.

- **For cash activity, if on-line intraday balance is less than or equal to zero, no buy orders allowed.**
  - ➢ The on-line trading system will utilize a running intraday balance calculation to determine a client's intraday balance.
  - ➢ If this intraday balance falls below zero (0), then no purchase orders will be permitted through the on-line trading system. The calculation must take the margin calculations into consideration.
  - ➢ Sell orders will be permitted if the balance is less than or equal to zero.

- **Only broker activity from BOE and DORS will be included in the intraday on-line balance (prior day and same day activity).**
  - ➢ All BOE and DORS broker entered trade activity (buys and sells) will be included in the intraday running balance. This will include equities and options only.
  - ➢ I.e. If a client enters a trade in the morning and a broker enters a trade in the afternoon; the intraday balance will reflect both trades.

- **On open limits, stops, and stop limits target price is used to calculate open order value.**
  - ➢ Open buy orders will be reflected in the intraday running balance. On open limit, stop and stop limit orders, the client entered target price will be used to calculate the order value that will be subtracted from the intraday running balance.

- **Cancels must be reflected in daily balance: full and cancel/replace.**
  - ➢ Clients will have the ability to cancel any open orders that were entered through the on-line trading system. Phase I of the on-line trading system will include both full, partial, and cancel/replace options.

> If a client enters a full cancel of a buy order, the system should add back the value of the original order back into the intraday calculation upon receipt of UR OUT and the exchange has accepted and executed the order.
> If a client enters a full cancel of a sell order, upon receipt of UR OUT the system should modify the intraday balance according to the sell order rules once the exchange has accepted and executed the order.
> If a client enters a partial cancel of a buy order, the system should add back the value of the partial cancel order to the intraday calculation upon receipt of UR OUT and the exchange has accepted and executed the partial cancel order.
> If a client enters a partial cancel of a sell order, upon receipt of the UR OUT the system should modify the intraday balance according to the sell order rules for the value of the partial order once the exchange has accepted and executed the order.
> If a client enters a cancel/replace of a buy order, the system should first check to see if the replacement order will be allowed according to the intraday rules if the cancel was accepted. If so, then the order should be allowed. Upon receipt of the UR OUT and the exchange has accepted the cancel order, the value of the original order should be added back to the intraday calculation and the value of the replacement order should reduce the intraday calculation.
> If a client enters a cancel/replace of a sell order, upon receipt of the UR OUT the system should first check to see if the replacement order will be allowed under the intraday rules then modify the intraday balance accordingly for the cancelled and replaced order.

- **No credit for open sell orders.**
  > The intraday running balance will subtract both open buy orders and executed buy orders. Open sell orders (those orders that have yet to be executed) will not be credited back to either Type 1 or Type 2 running intraday balances.

- **No credit for unsettled sells.**
  > The intraday running balance will not add back the value for unsettled sells.

- **Block entire trade on-line if order exceeds Type 1 (cash) or Type 2 (margin) running balance calculation.**
  > Clients will not be able to submit a trade if the value of the trade exceeds the intraday calculated balance. This check will be performed on the front end and will prohibit the client from submitting the trade.

- **The on-line trading system will not handle real-time pricing of portfolios. Current PaineWebber systems do not handle market fluctuations (i.e. real time pricing) for margin calculations.**

- **Closed-end funds are traded as equities and should be treated as a non-marginable security.**

- **How does BOE handle close-end funds in terms of the prospectus requirement?**

7.3   Calculations

The on-line trading system will reference a start of day calculation for all validated trading clients. The start of day calculation will be based only on Type 1 Cash Accounts and Type 2 Margin Accounts. All other types of accounts will be restricted from on-line trading. Based on this start of day calculation, a running intraday balance will be maintained reflecting all activity. For informational purposes, a credit is equal to a positive number (+) and a debit is equal to a negative number (-).

As mentioned earlier, the intraday balance will reflect all trade activity from both client entered transactions as well as BOE and DORS broker-entered transactions and will need to be continuously updated.

7.3.1   Type 1 - Cash Account Calculations

7.3.1.1   Type 1 - Start-of-Day Calculation

The start-of-day calculation is dependent upon whether or not the value of the trade date balance is positive or negative. Trade date balances are the amounts that represent executed trades from prior days that have yet to settle.

If the trade date balance is negative, add this value to money market funds. Then, subtract any debit card activity, encumbered funds, and any open buy orders. (See chart below.) If the Trade Date Balance was positive the client would be receiving credit for unsettled sells.

If the trade date balance is positive, ignore this figure. Instead, add the settlement day balance to money market funds. Then, subtract any debit card activity, encumbered funds, as well as any open buy orders. (See chart below.) Settlement Date Balances are trades that have settled.

Depending on the value of the trade date balance, one of the following calculations should be used as the start-of-day calculation for Type 1 Cash Account only:

If Trade Date Balance is:

Negative (-)	Positive (+)
Add Money Market Funds and Trade Date Balance	Ignore Trade Date Balance
Subtract Debit Card Activity	Then take Money Market Funds plus/minus Settlement Date Balance
Subtract Encumbered funds	Subtract Debit Card Activity
Subtract Open Buy Orders	Subtract Encumbered funds
	Subtract Open Buy Orders

These calculations will be used as a starting point at the beginning of each business day and will be updated throughout that day using the running intra-day calculations detailed below.

7.3.1.2   Type 1 - Running Intra-day Balance

Once the start-of-day balance has been determined, it will be continuously updated throughout the day creating a running intra-day calculation. This intra-day balance will include all activity entered by a client or their broker.

The first trade of the day will be calculated as follows:

Start-of-day Balance
+/-
(Fed Funds Wires – Phase II)
(Sent or received for that business day up to the time of the order)
-
Open Buy Orders (Principal Value of Trade)

If the start of day balance is negative then the client will be blocked from sending any buy orders.

After the first trade has been executed, the resulting value in the above calculation will be the Intraday Balance. All trades sent after the first order of the day will be compared against this balance and will be calculated as follows:

Intraday Balance
+/-
(Fed Funds Wires – Phase II)
(Sent or received after the previous order of that business day)
-
Open Buy Orders (Principal Value of Trade)

There will be no credit for any open or executed unsettled sell orders.

This balance excludes any transactions that are included in the daily batch cycle, such as: cash withdrawals/deposits, check deposits/withdrawals, transfers between PaineWebber accounts (i.e. GJOWS), etc.

Clients will only be able to purchase securities up to the value of the calculation outlined above. If the order is larger that the balance, the order must be blocked. If the client has fully paid for securities in a Type 1 account, these securities will not count as purchasing power for new buy orders.

The system will utilize the Type 1 calculations for accounts specifically coded as a Type 1 Cash Account or for Type 2 Margin Accounts in which there is no margin agreement on file within CDB.

7.3.1.2.1 Type 1 - Buy Orders

In order for the on-line trading system to accept client entered buy orders, the principal value of the trade must be less than the then current running intra-day balance.

If the principal value of the trade is greater than the remaining intra-day balance, the order will be blocked. The client will be instructed via messaging to contact their broker.

If: Principal value of trade $\leq$ Type 1 Calculation Above	If: Principal value of trade $>$ Type 1 Calculation Above
Then: Allow trade & subtract value from intraday balance to determine new intraday balance for next trade.	**Then:** Block trade and do not perform any additional calculations. Return intraday calculation to its previous value.

7.3.2   Type 2 - Margin Account Calculations

7.3.2.1   Type 2 - Start-of-Day Calculation

In order to determine relative funds available for margin account orders, both SMA and House Excess (HE) must be re-calculated after each trade throughout the day. The purpose is to ensure that a client's funds availability is not overstated and to protect them from trading into a call position.

Start-of-day calculations must be established for both SMA and HE. This is done by first adjusting both for open buy orders. Depending on whether a security is non-marginable or not will determine the charge against SMA and HE. (See chart below.)

After the adjustments, add any cash/money market funds and subtract any pending debit card activity. The remaining balance will be the SMA and HE start-of-day balance.

The calculations are as follows:

Step 1:

Adjust SMA and House Excess for Open Buys

	Non-Marginable Securities	Marginable Securities
SMA	SMA – 100% of value of security	SMA – (MV of the open buy order * the 50%)
House Excess	HE – 100% of value of security	HE – (MV of the open buy order * 30% or $2 per share)

Note: Phase II will allow for further granularity of the maintenance charges such as account level, IE, etc. charges.

Step 2:

Adjusted SMA	Adjusted House Excess
+	+
MMF	MMF
-	-
Encumbered funds	Subtract Encumbered funds
-	-
Pending Debit Card Activity	**Pending Debit Card Activity**
Start-of-Day for SMA	*Start-of-Day for HE*

Clients will only be able to purchase securities up to the value of the calculation outlined above unless this figure is negative. In this situation, all client buy orders should be blocked. Both the adjusted SMA and HE will be updated throughout the day. Before each buy order, the system should take the lesser of the SMA or HE calculations (See Margin Intraday Calculations).

7.3.2.2 Type 2 – Running Intraday Calculation

The intraday running balance will include all client and broker entered buy or sell orders. As mentioned earlier, in order to determine relative funds available for margin account trades, both SMA and House Excess (HE) must be re-calculated after each trade throughout the day. The purpose is to ensure that a client's funds availability is not overstated by selecting the lesser of SMA or HE and to protect against them from trading into a call position.

Both the adjusted SMA and HE will be updated throughout the day. Before each buy order, the system should take the lesser of the SMA or HE calculations to determine whether or not to accept the order.

For the first trade of the day, the lesser of the start of day calculations will be the starting point.

The intraday balances should be calculated as follows:

Step 1: First Trade of Day
The first trade of the day should be based on the minimum of either the SMA or HE Start-of-Day Balance. Both the SMA and HE balances will be appropriately adjusted to reflect the first trade of the day.

Start-of-Day for SMA	*Start-of-Day for HE*
+/-	+/-
(Fed Funds Wires – Phase II)	**(Fed Funds Wires – Phase II)**
(Sent or received for that business day up to the time of the order)	(Sent or received for that business day up to the time of the order)
+/-	+/-
<u>**First Trade of the Day**</u>	<u>**First Trade of the Day**</u>
Intraday Balance for SMA	*Intraday Balance for HE*

If the start of day balance is negative, the system should reject all buy orders for the client.

Step 2: Trades Thereafter
All trades entered after the first trade of the day will be based on the lesser of either the SMA or HE Intraday Balance. Again, both the SMA and HE balances will be appropriately adjusted to reflect the latest trade and subsequent trades will be based on the lesser of these values.

Intraday Balance for SMA	*Intraday Balance for HE*
+/-	+/-
(Fed Funds Wires – Phase II)	**(Fed Funds Wires – Phase II)**
(Sent or received after the previous order for that business day)	**(Sent or received after the previous order for that business day)**
+/ -	+/ -
<u>Latest Trade</u>	**<u>Latest Trade</u>**
New Intraday Balance for SMA	*New Intraday Balance for HE*

This intraday balance cycle will continue until next start-of-day calculations are updated.

Note: Non-marginable securities bought or sold in a Margin account should be booked as a cash transaction (Type 1 trade).

7.3.2.2.1 Type 2 - Buy Orders
In order for the on-line trading system to accept client entered buy orders, the principal value of the trade must be less than or equal to the lesser of the SMA or HE Intraday Balance at the point the order is placed. The principal value of the trade is dependent upon the type of the trade, marginable or non-marginable.

If the principal value of the trade is greater than the remaining intraday balance, the order will be blocked. The client will be instructed via messaging to contact their broker.

If the principal value of the buy order is less than or equal to the intraday balance, the order will not be blocked, and the principal amount is subtracted from the both intraday balances.

Step 1: Select the lesser of the SMA or HE Intraday Balances. If the order is the first order of the day then the system should select the lesser of the SMA or HE Start of Day Balances.

Step 2: The system must determine whether the security is marginable or non-marginable.

Step 3:

Depending on which is less, SMA or HE, the following apply:

SMA

If: Marginable Security	If: Non- Marginable Security
Then: **Subtract from the Current Intraday Balance** *Principal value of trade x Federal Charge for that security. (Reg T for equities = 50%)*	**Then:** **Subtract from the Current Intraday Balance** Principal value of trade

HE

If: Marginable Security	If: Non- Marginable Security
Then: **Subtract from the Current Intraday Balance** *Principal value of trade x 30% or $2 per share.*	**Then:** **Subtract from the Current Intraday Balance** Principal value of trade

Note: Phase II will allow for further granularity of the maintenance charges such as account level, IE, etc. charges.

While only the lesser of SMA or HE Intraday Balance needs to be considered for allowing a buy order, the system will need to re-calculate both balances if the order is indeed approved.

Step 4:

If: Principal value of trade ≤ Type 2 Calculation	If: Principal value of trade > Type 2 Calculation
Then: Allow trade & subtract value from both intraday balances to determine new intraday balance for next trade.	**Then:** Block trade and do not perform any additional calculations. Return both intraday calculations to their previous values.

7.3.2.2.2 Type 2 - Sell Orders

Client should be blocked from selling securities not long in their account. The On-line Trading system should verify that the client actually owns the shares of the security that they wish to sell. Hence, the system should check for long positions in Type 1 and Type 2.

Clients should only be able to redeem securities that are "free and clear." (These securities are in a location of "BOX" or "SEG" on the "P" page of Account Inquiry. These two locations indicate that the security is either a segregated fully paid security or a security that is held in street name.)

Clients will not be able to sell restricted or control securities or securities in custody and safekeeping via the On-line trading system. Therefore, clients will not be able to sell restricted stock under that stock's security number. (Restricted stocks have a location of "LGL" on the "P" page of Account Inquiry, and securities in custody or safekeeping have locations of "CDY" or "SFK" respectively on the "P" page of Account Inquiry.)

Control securities will not be identified as such on PaineWebber systems. Therefore, clients who own restricted securities will be able to redeem their shares, through the On-line trading system, without the proper authorization.

Open (unexecuted) sell orders as well as unsettled sell orders will not be credited to the Intraday Running Balances.

Note: 100% MV of the security should be subtracted from order positions for marginable sell orders.

8   Additional Requirements·

The following are additional requirements for the on-line trading project that will not be ready for Integration Testing but should be available for General Release.

8.1   BOE Branch Manager Trade Review Screen

Branch Office Managers will have the ability to view orders that have violated one or more of the account- or trade-level edits and validations. The order detail may be viewed on-line via the existing Branch Manager Trade Review Screen that exists in the current BOE Workstation.

All on-line orders and trades should be copied and displayed in the existing Branch Managers Trade Review Screen. The OLT orders and trades should be displayed in the same manner with the same fields in their associated columns as orders and trades are currently presented.

8.2   Additional Margin Requirements

In light of recent news of increased margin requirements on Internet stocks, an edit on blocking particular stocks, both globally and on an account level, needs to be developed. This function requires that a defined list of stocks be blocked either globally across all accounts or on a selected account(s). A real time capability to add or delete securities from the list is needed as part of this function. If a security is blocked either globally or on an account level, the check must be performed at client order entry time.